

REMARKS

Claims 1-34 are pending. By this response, claims 1, 3, 24, 27, 29 and 32 have been amended, claims 2, 25 and 28 have been canceled without prejudice to or disclaimer of the subject matter recited therein, and claims 33 and 34 are new. Reconsideration and allowance are respectfully requested.

Claim 32 has been objected to on the grounds of informalities. Applicants have amended claim 32 to correct its dependency to claim 27. Accordingly, Applicants request that the Examiner withdraw the instant objection.

Claims 1, 16, 24 and 27 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Biles (U.S. Pub. No. 2004/0210749). Canceled claims 2, 25 and 28, which have been incorporated into claims 1, 24 and 27, respectively, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Biles in view of Yeh et al. (U.S. Pub. No. 2001/0047467). Applicants traverse these rejections and respectfully assert that the cited references fail to teach or suggest all of the claimed limitations.

With specific regard to claims 1, 24 and 27, neither Biles nor Yeh provide for the generation of a plurality of global predictions, wherein each global prediction is to be generated based on a **different amount of global branch history information** as claimed. The Examiner acknowledges that Biles “fails to teach wherein each global prediction is to be generated based on a different amount of global branch history information” OA p. 5, and relies on Yeh to cure the deficiencies of Biles. Applicants point out, however, that Yeh also fails to teach or suggest the use of different amounts of global branch history information as recited in the claims. In particular, Applicants traverse the Examiner’s assertion that Yeh’s scheme of using differently sized tables “inherently” requires different amounts of global branch history information. At the outset, Applicants note that the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. See MPEP 2112 (citing *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)). Rather, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. See MPEP 2112 (citing *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981)). The Examiner’s conclusion of inherency is based on the assumption that an index must necessarily be the same as global history information. Applicants disagree. See, for

example, FIG. 2A of Biles, which clearly shows an index on path 202 being derived from **both** and address 20 and history data from a history register 30. Thus, increasing the size of an index into a branch prediction table could merely involve increasing the amount of address data being used. In other words, contrary to the Examiner's assertions, such an increase need not, in all cases, require a corresponding increase in the amount of global history being used. Similarly, a decrease in the size of an index into a branch prediction table does not necessarily require a corresponding decrease in the amount of global history being used.

Simply put, Applicants seasonably traverse the Examiner's assertion of inherency and request documentary evidence to support the conclusion that the claimed approach of using different amounts of global branch history information is a necessary aspect of the cited references. This limitation is neither explicitly nor inherently disclosed by the cited references. For at least the above reasons, claims 1, 24 and 27 are patentable over Biles and Yeh. Claim 16 depends from claim 1, and therefore also recites patentable subject matter. Accordingly, Applicants request that the Examiner withdraw the instant rejection.

Claims 2-3, 5-6, 18-19, 21-23, 25, 28-29 and 31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Biles in view of Yeh. Applicants traverse this rejection and respectfully assert that Biles and Yeh fail to satisfy a *prima facie* case of obviousness because all of the claimed limitations are not taught or suggested by the references.

In particular, claims 2, 25 and 28 have been incorporated into claims 1, 24 and 27 as already discussed, and claims 3, 5, 6, 29 and 31 depend from allowable claims 1 and 27, also already discussed. Accordingly, claims 3, 5, 6, 29 and 31 also recite patentable subject matter. With further regard to claim 6, the Examiner has taken Official Notice "that adding an additional level of storage for global branch predictors is well known in the art." OA p 7. Applicants seasonably traverse this assertion of Official Notice and request documentary evidence supporting it. In particular, it is not clear that one of ordinary skill in the art would recognize any alleged teaching of "an additional level of storage" as a third global predictor to generate a third global prediction by indexing into a third global array based on a third index, the third index to be associated with a third amount of global branch history length, as claimed.

With specific regard to claim 18, neither Biles nor Yeh teach or suggest each global prediction to be generated based on a different amount of global branch history information as claimed.

Applicants reiterate the above traversal of the Examiner's assertion of inherency with regard to the claimed different amounts of global history information and request documentary evidence. The Examiner has also taken Official Notice "that changing the order of multiplexers is well known in the art." OA p. 9. Applicants seasonably traverse this assertion of Official Notice and request documentary evidence supporting it. For at least the above reasons, claim 18 is patentable over Biles and Yeh. Claims 19 and 21-23 depend from claim 18, and therefore also recite patentable subject matter. Accordingly, Applicants request that the Examiner withdraw the instant rejection.

Claims 4, 20 and 30 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Biles and Yeh in view of U.S. Patent No. 6,374,349 to McFarling. Applicants traverse this rejection and respectfully assert that neither Biles nor Yeh nor McFarling satisfy a prima facie case of obviousness because all of the claimed limitations are not taught or suggested by the references.

In particular, none of the cited references provide for the generation of a plurality of global predictions, wherein each global prediction is to be generated based on a **different amount of global branch history information** as recited in the claims from which the rejected claims depend. Biles and Yeh neither explicitly nor inherently disclose this limitation, as already discussed. McFarling is limited to a branch predictor with serially connected predictor stages and demonstrates no appreciation for the generation of a plurality of global predictions as claimed. For at least the above reasons, claims 4, 20 and 30 recite patentable subject matter. Accordingly, Applicants request that the Examiner withdraw the instant rejection.

Claims 7-15, 17, 26 and 32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Biles. Applicants traverse this rejection and respectfully assert that Biles fails to satisfy a prima facie case of obviousness because all of the claimed limitations are not taught by the reference.

In particular, the rejected claims depend from allowable claims 1, 24 and 27, and therefore also recite patentable subject matter, as already discussed. With further regard to claim 7, Applicants reiterate the above traversal of the Examiner's assertion of Official Notice with regard to the claimed use of a multiplexer to generate an intermediate prediction. With further regard to claim 17, the Examiner has taken Official Notice "that storing branch target addresses in a branch prediction table is well known in the art." OA p. 16. Applicants seasonably traverse this assertion of Official Notice and request documentary evidence supporting it. In particular, it is not clear that one of ordinary skill in the art would recognize any alleged teaching of "storing branch target addresses in a branch prediction

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table" as including an instruction target address of a branch instruction in a branch prediction as claimed. For at least the above reasons, claims 7-15, 17, 26 and 32 recite patentable subject matter. Accordingly, Applicants request that the Examiner withdraw the instant rejection.

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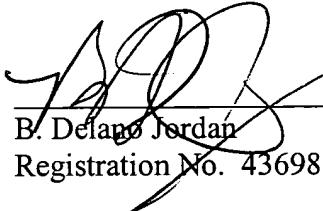
CONCLUSION

It is submitted that the application is in condition for allowance. A Notice of Allowance in due course is solicited. The Office is hereby authorized to charge any additional fees under 37 C.F.R. §1.16, §1.17, or §1.136 or credit any overpayment to Deposit Account No. 11-0600.

Should the Examiner have any questions concerning this matter, he is invited to contact Applicants' undersigned attorney at (202) 220-4226.

Respectfully submitted,

KENYON & KENYON


B. Delano Jordan
Registration No. 43698

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KENYON & KENYON LLP
1500 K Street, N.W. - Suite 700
Washington, D.C. 20005-1257
Tel: (202) 220-4200
Fax: (202) 220-4201
DC01 617949 v1